

STATEMENT OF THE CLAIMS

1-40 (canceled)

41. (currently amended) A ~~continuous process~~ method for producing oriented plastic tube, comprising:

performing a ~~start-up~~ continuous sequence, including

(i) continuously extruding a tube to a start-up inner diameter and a start-up outer diameter selected to facilitate passage of the tube over a diametrical expansion apparatus ~~during the start-up sequence and~~

(ii) passing the tube of (i) over the diametrical expansion apparatus;

~~after the start-up sequence, calibrating the diameter of the extruded tube to an operating diameter which is less than the start-up diameter; and performing a continuous operating sequence, including~~

(iii) adjusting the start-up outer diameter of the extruded tube of (i) to a first adjusted outer diameter;

(iv) temperature conditioning the tube of first adjusted outer diameter;

(v) diametrically expanding the tube of (iv) into an oriented tube having a second outer diameter larger than the first adjusted outer diameter; and

(vi) cooling the oriented tube of (v).

wherein the first adjusted outer diameter is actively varied to control circumferential draw of the oriented tube during performance of the continuous sequence without stopping continuous extrusion of the tube

~~(i) extruding and calibrating the tube to the operating diameter with a variable diameter calibrator;~~

~~(ii) temperature conditioning the tube;~~

- ~~(iii) diametrically expanding the tube with a diametrical expansion apparatus; and~~
- ~~(iv) cooling the tube to produce oriented tube having a circumferential draw ratio.~~

42. (currently amended) A ~~continuous process~~ method according to claim 41, wherein:

the diametrical expansion apparatus includes an expandable plug, and diametrically expanding the tube in (v) includes applying an internal pressure to the tube within an expansion zone at a downstream end of the tube with ~~an~~ the expandable plug[[,]] and limiting and maintaining pressure within the expansion zone with the expandable plug, and

~~wherein during performance of the start-up sequence, the expandable plug is in an unexpanded state and~~ the expandable plug is in an unexpanded state during initial passage of the tube over the diametrical expansion apparatus in (ii) the start-up diameter is sufficiently large for allowing the tube to pass over the expandable plug in the unexpanded state.

43-46. (canceled)

47. (currently amended) A ~~continuous process~~ method according to claim 41, wherein:

a solid mandrel disposed within [[a]] the diametrical expansion apparatus is utilized to diametrically expand the tube in (v).

48. (new) A method of producing oriented plastic tube, comprising:

performing a continuous sequence, including

- (i) continuously extruding a tube, the tube having an outer diameter;
- (ii) adjusting the outer diameter of the tube of (i) to a first adjusted outer diameter;
- (iii) temperature conditioning the tube of first adjusted outer diameter;

(iv) diametrically expanding the tube of (iii) into an oriented tube having a second outer diameter larger than the first adjusted outer diameter; and

(v) cooling the oriented tube of (iv),

wherein the first adjusted outer diameter is actively varied to control circumferential draw of the oriented tube during performance of the continuous sequence without stopping continuous extrusion of the tube.

49. (new) A method according to claim 48, wherein:

the circumferential draw of the oriented tube is controlled to vary hoop strength of the oriented tube.

50. (new) A method according to claim 48, wherein:

the first adjusted outer diameter and the second outer diameter are both actively increased during performance of the continuous sequence without changing circumferential draw of the oriented tube.

51. (new) A method according to claim 50, wherein:

the second outer diameter is actively increased by replacing a downstream tube sizing apparatus during continuous extrusion of the tube.

52. (new) A method according to claim 51, wherein:

the second outer diameter is further actively increased by replacing a diametrical expansion plug.

53. (new) A method according to claim 48, wherein:

the first adjusted outer diameter and the second outer diameter are both actively decreased without changing circumferential draw of the oriented tube.

54. (new) A method according to claim 53, wherein:

the second outer diameter is actively decreased by replacing a downstream tube sizing apparatus during continuous extrusion of the tube.

55. (new) A method according to claim 54, wherein:

the second outer diameter is further actively increased by replacing a diametrical expansion plug.

56. (new) A method according to claim 48, wherein:

the oriented plastic tube of (v) has a wall thickness, and the wall thickness is adjusted during the continuous sequence without changing circumferential draw of the oriented tube.

57. (new) A method according to claim 56, wherein:

the wall thickness is adjusted by varying a downstream haul-off speed of the oriented plastic tube.

58. (new) A method according to claim 57, wherein:

axial draw of the oriented tube is varied by actively varying a ratio of the downstream haul-off speed of the oriented plastic tube to an upstream haul-off speed of the tube.

59. (new) A method according to claim 48, wherein:

circumferential draw of the oriented tube is increased by actively decreasing the first adjusted outer diameter without increasing the second outer diameter during performance of the continuous sequence and without stopping continuous extrusion of the tube.

60. (new) A method according to claim 48 wherein:

the first adjusted outer diameter is actively increased without increasing the second outer diameter to decrease circumferential draw of the oriented tube.

61. (new) A continuous process according to claim 48, wherein:

diametrically expanding the tube in (iv) includes applying an internal pressure to the tube within an expansion zone at a downstream end of the tube.

62. (new) A continuous process according to claim 48, wherein:

a solid mandrel disposed within a diametrical expansion apparatus is utilized to diametrically expand the tube in (iv).

63. (new) A continuous process according to claim 49, wherein:

the hoop strength is a tensile strength.